COMPUTER WEEKLY

Staving off a 'jobs holocaust'

STATING that there is no one solution to the problems created by the free advancement of technology, particularly in its effects on the present-day work ethic, Clive Jenkins, head of the Association of Scientific, Technical and Managerial Staff, and Barrie Sherman, research director for ASTMS, have urged a "multi-dimensional approach" in our attempts to stave off a "jobs holocaust."

With the above statement, Jenkins and Sherman round off their book, The Collapse of Work', which explores the potential demise of the work ethic and how society is (or is not) assimilating new technology.

One of its themes is that "industrialised societies will not, in the future, be able to provide work for all on a continuing basis."

But this need not be disastrous, they say; instead we will have the prospect of exploiting what they call "great opportunities," while against that will be the possibility of a "backward step towards a post-industrial dark age."

A deciding factor in all of this would of course be the types of decisions taken both nationally and globally, some of which may indeed "fly in the face of established political practice and need international courage and vision."

A topic well-known to the authors is that of the role of trade unions in society, and of this they say: "The new technological changes will, as we shall see, have to elicit a powerful, intellectual response from the trade union movement."

"It is impossible to over-dramatise the forthcoming crisis, as it potentially strikes a blow at the very core of industrialised societies — the work ethic," write the authors. "We have based our social structures on this ethic and now it would appear that it is to become redundant along with millions of other people. . . ."

Also: "Well organised trade unions in any country hold the keys to the quality of life in that country and therefore have a great responsibility."

In the final chapter and analysis, Jenkins and Sherman suggest that "prevention is better than cure" and among the proposals to be found there is the setting up of the new public sector funds — one based on North Sea oil revenues, the other on pension fund capital. They also call for education and retraining schemes to be implemented to handle the fall-out of workers.

*The Collapse of Work, by Clive Jenkins & Barry Sherman. £3.50. Published by Eyre Methuen.

NEWS IN BRIEF

Mirror halts new technology

DIFFICULTIES with the computer-driven page make-up system at the Daily Mirror have led its management to drop the development, for the time being, and revert to manual make-up by cutting and pasting.

The Linotype-Paul system using large storage CRT screens was taking much longer to assemble pages than traditional hot metal methods. This led to serious production delays.

Jail terms cut

TWO men who were jailed at the Old Bailey last year for a £275,000 blackmail attempt against ICL (CW, February 8, 1978) had their sentences reduced in the Court of Appeal last week. Rodney Cox, 28, a senior operator at ICL's Rotterdam site, and Peter Jenkins, 28, a freelance programmer, had their six and five-year terms reduced to four and three years respectively.

PO micro trial

A TRIAL of automatic call recording equipment beginning this Saturday in Eastbourne, brings microprocessors into the telephone network for the first time in the UK, and possibly in the world, according to a Post Office spokesman. If successful, the ACRE equipment will be installed throughout the network from 1981, eliminating the need for telephone operators to write a ticket for each call connected manually.

Itel Corp acts to avert leasing crisis

DRASTIC steps are being taken at Itel Corp to secure its future following the body-blow to its leasing business from the IBM 4300, and worse than expected sales for the AS line of IBM-compatible CPUs.

The company is understood to have made a major transaction with a private finance company involving sale of the residual values of computers and transport assets on lease.

The company's problems have surfaced because it has been in process of leasing two million units of preferred stock. Late last week it cancelled the offering.

The option means that Hillman has agreed to buy these residuals at their book value if Itel asks them to, and has both paid $12.5 million for agreeing to do so. However no money has changed hands. Instead, the assets have been put into a new subsidiary, valued at $12.5 million, run by Itel but owned by Hillman, which will actually liquidate the assets.

It appears that Itel concluded the deal because its accountants wanted it to reduce the book value of the computers to a more realistic figure. The deal was possible because many of the transportation assets were on Itel's books at well below their current value.

Under US Securities and Exchange Commission rules, Itel cannot make any comment other than what is in the prospectus. However, an amendment to the prospectus states that first-half results will be substantially down and that the computer sales force has been reduced. The reduction is understood to be at least 30%, thought to be about 100 people.

Observers say that Itel has been paying National Semiconductor $350,000 for AS/3-5 processors, making it very difficult to sell them profitably against the 4341.

When announced (CW, March 1), the 3-5 was offered at

Itel also says that its aggregate claims under the Lloyds "J" policy with which residual values of leased computers were insured are expected to exceed $100 million.

Itel's retrenchment has also included a complete withdrawal from the minicomputer marketing business, including cancellation of plans to sell the Data General CS line of business systems.

Things look brighter for Itel in the second half of the year, when OEM prices for National Semiconductor and Hitachi CPUs come up for renegotiation.

$800,000 including two Megabytes of memory, against $245,000 for a two Megabyte 4341.

Itel has struck a complex financial deal with Hillman of Pittsburgh, under which it has paid Hillman $12.5 million in what is called a "put" option. This is on the residual values of all Itel's leased equipment, including $48 million of computers and about the same value of ships, containers and railway trucks.

In the preliminary prospectus for the stock Itel reveals a first quarter loss on computer sales and leasing of $4.4 million, against $6.3 million profit made in the 1978 first quarter.

Strikers cause £350m phone bills backlog

NOW into its eighth week, the strike by Post Office computer and clerical staff has created a phone billing backlog of about £350 million and shut down all main System X development centres (CW, May 17).

It has been revealed that among special conditions attached to an unofficial corporation proposal to restructure all grades, are the introduction of contract and part-time DP staff within the Data Processing Service and the acceptance of word processing equipment into the corporation.

A spokesman for the Society of Civil and Public Servants said, "The Post Office has made at least two large loans that we know of. One example of how the dispute is affecting its cash flow is that one area that would normally take in £8 million in about seven weeks has only received about £104,000."

● Engineers at two GEC Coventry works voted last week to cut their overall pay claim from 23% to 15% and to support financially 67 commissioning engineers who have been suspended by the company for not

working normally (CW, May 17). The engineers, apart from the 87 suspended, have also agreed to return to normal working pending settlement.

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Crowds queue in the rain for the NCC

TIM PALMER reports from New York

UMBRELLA sellers did a brisk business as thousands of showgoers lined up in persistent rain to register for the National Computer Conference at New York's Coliseum this week.

Among the main attractions of this show were the enhanced Honeywell page processing system, the PPS 2, which incorporates the powerful 66/43 minicomputer, and Prime's 1 Mbyte memory board for its minis. This is made of 64K bit chips.

For Dataproducts the acquisition of Plessey Inc, the UK group's printer division (page 2),

gave the company entry to the daisy wheel market and in New York Dataproducts launched a 50 chps daisy wheel printer developed by Plessey.

As exclusively reported in Computer Weekly (CW, April 19), Burroughs has adopted the Xerox 9700 high speed page processor.

The innovative bit slice Univac 1100/60 (CW, May 17), was formally announced on Tuesday in New York and yesterday, Wednesday, in London. Prices range from $319,000 for a 512K word single processor to $1,442,000 for a 1 Megaword dual

processor.

Neatly leapfrogging the 32-bit mini makers, Harris has added a printing system after evaluating Siemens' ND2 laser printer. It was announced at the NCC as the B9270-35. Incorporating a Digital Equipment PDP/11 it runs at up to 18,000 lpm.

Briefing

Magnuson raises $10m

IBM-COMPATIBLE processor manufacturer, Magnuson Computers has raised nearly $10 million of working capital for expanding its production and marketing operations, disproving the doubts about its capital raising ability expressed by New York stockbrokers, Paine Webber Mitchell Hutchins (CW, May 10).

Magnuson's M80 family of IBM 4300 compatible machines should be available in Europe by the end of the year. The working capital was raised from a number of sources in return for a total of 23% of Magnuson shares.

As half-time figures of $1 million net profit on $53 million turnover for the six months to January 27 indicate, the company is in no immediate trouble but the board hopes by the reorganisation to achieve faster growth and improve profitability.

New man at the top is Frank Grisanti, whose management consultancy, Grisanti and/or of Los Angeles, specialises in improving the performance of computer companies.

Grisanti described Larry Goshorn as a "technical genius." Goshorn in turn described Grisanti and Galif as "good people", but claims that he is legally chairman and president.

Other changes announced are two additional board members, lawyer Dennis Nystrom who becomes General Counsel, and Irwin Kwatek, an existing GA executive. John Conlon, who joined the board in 1975, becomes chairman.

Bow Group on NEB

THE National Enterprise Board should be merged with the British National Oil Corporation in order to help finance strategic new industries with North Sea oil revenue, according to the Bow Group. In a paper, the Bow Group asserts that the NEB should carry on subsidising venture such as Inmos, but should lose to other bodies its functions of supporting lame ducks and promoting exports and regional development.

Faster discs

TWO new low-cost fixed discs for Data General Nova and Eclipse minis, and the Micronova computer-on-a-chip, feature microprocessor-controlled "seek" mechanisms for increased speed, and Winchester technology. The units hold 12.5 Megabytes and cost around £3,350.

Bank shifts

SEVEN-DAY working has been agreed to by Barclays Bank computer staff following a recent ballot. The agreement will mean that staff will work between 33.5 to 35 hours a week and receive a shift allowance of 45% of salary — providing this falls between minimum and maximum annual payments of £1,131 and £2,868.

Off to the club

BECAUSE of the shortage of space at ICL's Slough offices, 11 marketing department staff are to be moved to the Stoke Country Club, Stoke Poges, for up to six months while the company attempts to find new office space in Slough. According to the company, "all the staff are very pleased with the arrangements for the move, which are the normal terms offered in such a case."

Wang's bid for office market

THE fiercest challenge from any manufacturer to IBM's plans for the electronic office market was announced by Wang at the NCC in New York on Monday. The equipment introduced includes an IBM-compatible electronic mail facility; the integration of word and data processing on both of Wang's main ranges, the VS mainframes and the OIS word processors; and a new 370/158 class VS model.

This last machine, the VS-100, is a 32-bit processor with 64-bit highway, costing $93,000 for a 1 Megabyte system, compared with $245,000 for a 1 Mbyte 4341 from IBM.

Fortran and PL/1 will be available next year for both modals in the VS line in addition to the existing Cobol, Basic and RPG II.

A new database system combining both features of network and relational databases has also been added for the VS systems.

Kay communications features are the announcement of 3780, 3790 and 3270 protocols for both the OIS and VS lines; these protocols are also supported by the Mailway electronic mail controller enabling both text and data messages to be transmitted between OIS word processors and VS computers, and to IBM mainframes.

Integrated Information Systems, IIS, are achieved by Wang in two ways. The company's word processing workstations store almost all the required functions locally, and are now attachable to VS and VS-100 systems in any mix of word and data processing stations.

At the same time Basic has been added to the OIS line of word processors, enabling users to add data processing applications. All VS and almost all word processing users can add all these facilities to their existing systems.

Other introductions from Wang were two new OIS models, the low cost 125 and the top end 145, and a dual daisy wheel printer for users wanting to combine type founts.

ICL clarifies stance on open systems networks

ICL re-affirmed its long-term commitment to open systems networking based on international communications standards at the 2900 Club meeting last week. At the same time it made clear that its short-term strategy was the development of the Cream family of microprocessor based protocol converters, first revealed at the CUA meeting last month (CW, April 26).

"It could well be 10 years before a firm international standards appear for open networking," noted Jack Houldsworth of the company's Letchworth development centre,

"and we cannot wait. In common with other manufacturers, we will have to address the most common communication needs in the interim."

ICL, it argued, was well placed to implement facilities along with the emerging standards, being closely involved with standards activity.

It would also benefit from its "onion skin" communications architecture, which would permit it to replace levels with each standard as it appeared.

ICL has not as yet announced a networking architecture along the lines of IBM's SNA or Burroughs' BNA and its present stance is seen by users as a continuing policy of "one-off" communications specials.
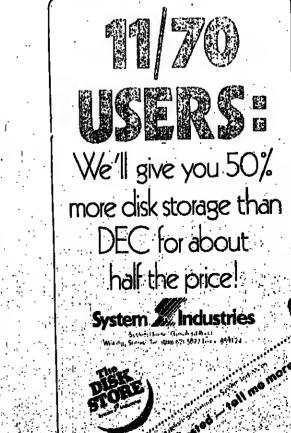
A network architecture has, however, been expected for some time and may be announced in November, according to one source.

Users are also still waiting for the Integrated Communications Executive (ICE) for the popular 2903/4 systems. Thought to support extensive interconnection of 2903s and 2904s, ICE is believed to be under test release at a few UK sites and may be released later this year.

The 2900 Club meeting addressed itself to the topic of communications excellence, and focused chiefly on the communications facilities of VME/ ...

Racal plans Ferranti bid if NEB is trimmed

RACAL will be making a strong bid for Ferranti if the government goes ahead with its declared intention of cutting back on National Enterprise Board activities. Confirming this, Racal chairman Ernest Harrison said his group would not be interested in acquiring any of the projects started by the NEB, such as Inmos, Insac and Nexos.

In his view the board should not have become involved in establishing new companies, but there would continue to be a need for the NEB, or some similar government-supported body, to manage the industries which would not go back to the private sector.

Harrison said any break-up of the NEB had to be done with care to ensure that the good management that the board had should be kept to handle the unsaleable companies. Harrison was not blind to the benefits to be gained from some government aid.

Giving his annual review of Racal's progress, Harrison said that the company had just received a £1.3 million order from the Post Office for Racal-Milgo MPS 48 modems. These were for use on the new Datel 4832 service, and it was the first time that a major order had been placed by the PO for proprietary datacomms.

Outlining the group's performance, Harrison said it had been the greatest year in the group's history, with sales up to the end of March reckoned at £225 million showing a pre-tax profit of £60 million.

COMPUTER REVIEW

Not so much a chuckle, more a groan

THE letter about computers that was written to a provincial newspaper, quoted by Chad on page 4, may provoke plenty of chuckles, but it should also call for a good deal of disquiet. It reveals in the mind of the writer a set of ideas about computers that are so divorced from reality as to indicate a fundamental failure on the part of the media to impart any genuine understanding of the subject, to this individual at least.

It is clear that the writer has spent many hours watching television programmes on science and technology, and these programmes certainly purported to be bringing the viewers Truth, to be education rather than entertainment. Yet it is also clear that this person has totally missed the point of many of the scientific matters that were presented.

In the past Computer Weekly has printed many examples of the fantastic things lay people say about computers, usually displaying either blind fear or an absurdly inflated idea of what the machines are capable of doing. Much of the blame for this state of affairs must rest with the Press and broadcasting services, whose job it is to bring new ideas to those of the public who have left school.

The difficulty, however, is not that writers and television producers are unconscious of the problem. They spend countless hours arguing, discussing, theorising about how to bring over science to the general public. At the end of the day, though, when the pencil stubs are chewed to nothing and the ashtrays are overflowing, they still come up with the wrong answers. In television in particular, those involved will often admit that they end up choosing a scheme that makes "good television" rather than good Truth.

It is the obsession with trying to be entertaining, with trying to stop viewers from switching to the other channel, that distracts many a producer from getting the fundamental ideas across. This problem of how to make an impact, regardless of the subject matter, afflicts everyone who works in the media, but they often fail to see when the subject matter itself can be entertaining, if treated with patience, and if the reader/viewer is credited with a modicum of intelligence.

Two recent BBC programmes illustrate this — the first was on Einstein and the second on television. Both failed abysmally to get across any rational understanding of the ideas involved (which were of course very profound). Both employed well-known comic actors to walk around muttering "amazing... fantastic... the mind boggles..." as "gee-whiz data" was fed to them by scientists who might have known better. And when all the gee-whiz was over, the viewer, whether well or poorly educated, was little the wiser.

The Lancashire Telegraph letter gives an interesting insight into how misguided ideas can be acquired. Clearly the idea about "energy radiations" being picked up from rooms or beds where people have been comes from a programme an infra-red cameras. The programme failed, however, to get across the basic point that the camera is registering the residual warmth left by the person, which of course fades away in a short while.

The point has been made that the sum total of ignorance in the world is steadily increasing, as technological change outstrips the capacity of individuals to assimilate information. The implications of this for democracy are very serious, however. As society gets more and more technically oriented it is vital that the electorate be able to judge soundly the pronouncements of politicians, to prevent technological wool being pulled over its eyes.

In the shorter term, consumers need to be able to rebuff the ever-persistent excuses of "The computer made a mistake," or "We can't do that because of the computer," or "You have to do it this way because ..."

Prescription for DP health

ACCORDING to reports, the Institute of Data Processing Management has established a monthly surgery for members of its new microcomputer users' club. Once again it seems that the micro chip movement has caught the industry with its databases well and truly down.

But before the rest of us insist on equal rights and opportunities for mainframe employment, some basic reappraisal of the scheme would seem desirable. While it may well be feasible to take a Pet or Cherry to the surgery for consultation, larger species of computer would not be so welcome. This is, for a start, a strong handicap for mainframe users.

Also, the level of surgery available has yet to be revealed. Whereas a couple of 'scopes and a micro-sized soldering iron could sort out micro level ailments, more radical treatment could well be outside the competence of the organisations.

It would seem that for mainframe users, a similar project would be limited to that of an advisory service. Even so, surgeries could be expected to be crowded with worried, troubled and tense computing personnel. It may well be necessary, therefore, to establish separate clinics to cater for the needs of the various groups.

First in the advice centre (by installation custom) would be the operating team, complaining of a severe dose of spiking. Recommended remedy would be full-scale quarantine of all electric equipment in and around the site.

Next in line would be the programming team, suffering from coding spots before the eyes. Treatment would include complete isolation from VDU screens for three months.

Also present would be the analysts, complaining that they are misunderstood not only by their colleagues but by all the user departments. Confidence-boosting pills would be issued, plus some urgent patching of sensitive feathers.

Predictably also in the surgery queue would be end user management — their problem being a severe case of frustration. New applications are implemented several months behind schedule while existing jobs seldom come up to expectations. Remedy would be to spend a full working day with the DPM. Further complaints would be tinged with understanding.

Notably first in the surgery would be the DPM himself. His symptoms indicate a bad case of battle fatigue. The prescription will include establishing a firm structure of priorities and delegation, plus the recommendation to seek a smoother life as a DPM in a State-run installation.

Of course, it could be that the IDPM has it in mind to set up a mobile consultancy station, ready to rush to the dire needs of any installation in distress. If so, the unit can be assured of a busy schedule. Most DP managers would willingly pay the annual subscription for such an emergency service. The thought that a top-level team of advisors, plus perhaps skilled engineers could be rapidly summoned, would be of great comfort.

Unfortunately it seems that initially at least, the IDPM scheme, is limited to micro surgeries with a phone-in facility later in the summer. Particular emphasis is being given to first-time business users, who are probably most in need of sound, practical and hopefully rewarding advice.

The whole concept would seem to warrant some industry reward of its own for enterprise and originality. But it must be hoped that the organisers haven't overlooked one vital factor. To establish a professional computing surgery, there should be adequate stocks on hand of old issues of Computer Weekly.

Ten years ago...

Because of delays and uncertainty about ICL's Georges operating system, the Ministry of Agriculture want about half its work for the year without. . . Two bureaux, CRC from UK arm of 880 and Addressograph (now part of Ordinex systems) slanted operation on SDS Sigma 5s . . . The latter described as representing a third generation of size machines, was associated with Russia . . . The first Ferranti Mark 1 8250 plated about the memory was delivered to Foreign Office communications system. It had a 100,000 capacity and was for use on an ICL 1900A ordered for Government Communications HQ at Cheltenham.

Dataproducts acquires new printer

A DAISYWHEEL printer, introduced almost unnoticed to US last year by Plessey's Coast subsidiary Peripheral System Inc. been acquired by Dataproducts. The big OEM line specialist of Woodland California, has bought its printer division for an undisclosed sum.

The AlphaGraf printer chips daisywheel device, 132-column format, plant in Irvine, California, employs 85 people makes printers a month.

CAP-CPP cashes in on MicroCobol

CAP-CPP is beginning to reap the benefit of its substantial investment in MicroCobol, having now achieved some 50 installations and licensed the software to 20 OEM vendors. At the same time it has announced its first MicroCobol application packages in the form of purchase, nominal, and sales ledger systems.

Rapid progress has also been made by CAP on implementing the system for new machines, with 13 hardware types now supported. These include the IBM Series I, DEC PDP-11, Transdata CX400, Sord 223, Triton 3, Zentek ZMS 70, ADDS System 70, and Mostek SYS-80F.

However, no implementations are planned for the current generation of personal computers, such as the Apple or Pet, partly because of main memory and storage restrictions.

A more important reason is that such systems fall outside the carefully-defined market sector currently being addressed by CAP, namely the "explosive" demand for low-cost microprocessor-based systems from first-time commercial users.

That is aiming at this sector is emphasised by the substantial difference in cost between MicroCobol products and typical 'personal' software.

The application packages, for example, each cost around £1,000 while the Business Operating System (BOS) — a prerequisite for any MicroCobol system — is priced at £450.

Although only needed by vendors and sophisticated end-users, the MicroCobol development system — including the compiler, linker, librarian, and editor — is priced at £2,000, while two further facilities, the AutoClerk file maintenance and reporting package and the AutoIndex database and inquiry package, are priced at £1,000 and £300 respectively.

Of the 50 MicroCobol sales so far, about half have been made directly by CAP and the rest by the licensed distributors. However, with further licensing agreements being signed at around one per week, this sector should rapidly overtake.

VLSI silicon devices seen as 'black hole'

A GRAPHIC description of very large scale integration by silicon devices as a technological 'black hole' with an ever-expanding event horizon was given this week at the Motorola Microforum by Colin Crook, managing director of Rank Precision Industries.

Giving the keynote address as forum chairman, he said that silicon technology continued to absorb more and more of the systems business with time. Every year, significant portions of the sub-system, and ultimately system, pass over the event horizon and fall irreversibly into the silicon," he said.

With the advent of 1 million and 10 million transistor chips, silicon achieved control. "Then the question is whether the UK gets involved with silicon becoming or buys from the US and Japan."

He went on to reiterate the point made in Philadelphia by Gordon Moore of Intel (CW, February 22) that the major problem was defining what actually to make with the technology.

The silicon black hole now begins to warp the very nature of the market and end user, he said. "At this level of integration, no one escapes."

He therefore felt it inevitable that a true silicon systems country would need the technology at some level of VLSI capability.

CRT division sale

THE division of Ferranti that designs and manufactures the cathode ray tubes for the company's video terminals, the Special Components Department, has been sold to Thorn Electrical Industries. Though no price has been quoted for the sale, the Department is understood to have turned over some £2 million last year. It will be joining Thorn Brimar, and together they are expected to realise a £10 million company.

CMC for Mond

TO prepare data for its commercial applications, the Mond division of ICI has ordered two CMC Sovereign key-to-disc systems for installation at its Northwich, Cheshire, headquarters. Worth £98,000, the equipment comprises 20 keystations, four processing terminals and a line printer.

Problems of policing society

THE problems of policing society in the 1990s will be made more difficult by the speed at which technological change is outstripping people's ability to adapt to the new circumstances.

Speaking at a meeting of chief police officers and local authority representatives last week, Arthur Burrows, director of the Police Scientific Development Branch at the Home Office, based this prediction on the premise and question: "As all our material needs will eventually be met by only 10% of the potential workforce, what will the other 90% be doing?"

However, technology itself could provide much of the answer to the problem said Burrows. "In the 1990s, all the devices required by the police could be made available."

One device that could see a far quicker application in police investigative work is a micro-based Photo-Fit system (CW, November 30, 1979) which uses computer-aided design techniques to construct and modify the facial characteristics of suspects based on information from witnesses.

Software for the system has been compiled by the Computer Aided Design centre in Cambridge in conjunction with advice from Aberdeen University's psychology department.

"We are now working on the system so that it will be completely portable and therefore enable police officers to use it in the home of a witness." The present idea is that it would plug into any domestic television much like a TV game and the screen will provide the display.

Japanese aim at lead in decade

HAVING just about caught up with the US on computer technology by taking Honeywell licences and by copying IBM, the Japanese are planning to streak ahead when the fifth generation of mainframes arrives at the end of the 1980s.

MITI, the Japanese Ministry of International Trade and Industry, has formed a Fifth Generation Computer Survey and Research Committee which will lay plans for the generation of computers to follow IBM's H-series.

The committee is sitting under the chairmanship of Prof Tatsu Motoken at the University of Tokyo, and has already decided that for Japan, very large-scale integrated circuitry is in, but Josephson Junctions, the super-cooled logic circuits about which IBM has released considerable research material, are probably out.

Also out is Von Neumann architecture, the architecture which is the basis of almost all today's computers. Pattern recognition and imitation of the operation of the human brain will be closely studied.

The idea is to break away from the traditional approach of designing the hardware and then mapping the software onto it; instead the committee wants to design the software and general system operation, and then try and fit a hardware design to it.

Prof Toshiyoshi Kunii, also of Tokyo University, is the originator of the design approach, and is presently in the US studying future computer strategies at the University of Texas and with the National Aeronautics and Space Administration.

The committee is also to predict the likely socio-economic changes over the next decade which will determine the kinds of computers which are needed in the 1990s.

The committee is due to report in March 1981, after which an eight-year concerted national effort involving all the surviving manufacturers and public sector bodies will put the development plan into effect.

Keeping tabs on calls

THE field trials of ACRE, the Post Office's new Automatic Call Recording Equipment, which started last weekend (CW, May 31), could ultimately save the corporation millions of pounds, according to spokesmen.

The system, which so far has taken four years and £2 million to develop, replaces the ticket writing function of the telephone operators, required to log the details of calls needed for billing, with a micro-based magnetic storage system.

The system has a built-in clock for timing calls.

Six Eastbourne exchanges serving 60,000 customers are involved in the trials.

Downtime

by Chad

Calling all doctors, dentists and acupuncturists...

"AS others see us" is one of the themes of our "1984" column; we are continually coming across touching examples in the local Press of how ordinary people view computers. It is seldom one finds a piece so elegant, so all-embracing, so satisfying, as this letter from the Lancashire Evening Telegraph.

I was interested in the feature on "Tomorrow's World" showing how lettuce was grown by computer.

Could we not therefore have a computer for humans telling us everything about our bodies, the blood, urine, and acupuncture meridians.

The energy given off by each organ in our body has a certain gyration and oscillation, which in health and any deficiency would show up telling us what disease each organ may be suffering from.

Each disease within our body also gives off its own gyration and oscillation, and we could tell immediately which germ may be present within our body which could save a lot of lab tests.

I am sure someone in Blackburn builds computers, and all doctors, dentists, acupuncturists, etc should get together with their knowledge. It takes all kinds of medical knowledge to get the full range of requirements.

The air in Blackburn shops and operating theatres could be tested continually, which would reveal any dangerous chemicals or germs.

People may not think it necessary to have these computers in big stores or doctors' surgeries, but just think what it would be to the NHS and to every person. I think every person should know more about their body.

The computer could give a written report for people to take to their doctors if anything became abnormal.

A lot of lives could be saved and what could be tested at death or in the grave is beyond our imagination. The going on in the grave or at cremation should be tested then perhaps we would see the church's teaching brought to life and the doubts about death gone for ever.

We only need to think of what the computer revealed in the shroud of Jesus and the Mev (millions of electric volts — energy) with which He rose from the human body in spirit.

Our wavelengths are still connected to our loved ones and we CAN connect up to them after death, and I am sure the computer could do so...

What about it Blackburn? It is a money-making product and the more made for stores, doctors' surgeries, etc the cheaper it will be.

Last year's Derby winner, Shirley Heights, pips Hawaiian Sound at the post in the 199th run of the classic. Is 'Professor George' (see below) clean up on the bi-centennial?

The gentle art of Basic fluttering

ABOUT a year ago I wrote a computer program for football pools forecasting. This was the third I had written, but the first that worked well. Now I have turned my hand to horse-racing programs for the computer, and have already written four in both Algol and Basic.

The fundamental idea is that gambling programs have at least something in common, and this is their concern with uncertainty. This in turn suggests probability and statistical methods.

There are at least two jobs to be done, firstly to collect and sort the vast amount of data available on horse racing all over the world. This data then requires treatment by the standard methods of statistical analysis, such as standard error and the mean, difference between means, correlations, chi-squared, analysis of variance, factor analysis and so on in a whole mass of variations.

The second job is actually to forecast the result of horse races in the light of the rules or which is essentially adaptive.

This allows the computer to inform the user of a change in probability which necessitates change he made in the system. An example would be the possibility (in the light of an ever accumulating evidence) that in rule 5, the upper line should be 10-1 against rather than 12-1.

A second example might involve the separating of win bets from each way bets by dividing point it above into two groups. Winners should be the first four of SFs and WARs and each way bets should be in the first four of SFs and WARs. The grouping or "fine tuning" the user adaptively is evidence.

Two programs have been written for each unit: two in Algol and two in Basic.

Why leave the choice of shirt-bearer to the tipsters at the back of your daily newspaper? Prof Frank George has devised ways of making the formbook yield in secrets in Basic and Algol.

hypotheses we have constructed in the light of the selected data.

Let me indicate the sort of hypotheses we are checking out by these means. The following is a typical example.

We eliminate from consideration: (1) All horses for which we have no data, e.g. have never run before; (2) All horses that have gone up one class (or especially more than one class) for the first time; (3) All horses that have been placed neither in their last two races nor in 50% of their races; (4) If you are betting to win, the horse must be in the first three in the betting and the odds must not be less than 6-4 against; (5) If you are betting each way, the horse must be at least 4-1 against and no more than 12-1 against; (6) The horses involved should be in the first three in the speed figures (SFs) and also in what are called weight adjusted ratings (WARs); (7) The going (state of the ground) must be right for the horse.

We are not presenting an exhaustive list of the core factors.

Furthermore, the factors can be treated in two different ways. The first is the use of yes/no questions and suggests decision tables, and the more recent form of decision tables called Testrolog programs.

The second way is to use weightings which are on a numerical scale. This last method can also be used with a calculator.

The great advantage of the computer in this field has not only in processing speed but the forecasting, but even more in the statistical analysis which is a necessary precursor to the application of the various forecasting systems, and becomes just as vital the updating of the records in a database of the future.

```
10 DIM X (4,10),S(4)
20 REM SYSTEMS LOOP
30 FOR A = 1 TO 4
40 PRINT "ENTER NUMERIC
      CHARACTERISTICS"
50 REM LOOP
60 FOR E = 1 TO 10
70 INPUT X(A,E)
80 NEXT E
90 NEXT A
100 FOR A = 1 TO 4
110 LET S(A) = 0
120 FOR E = 1 TO 10
130 S(A) = S(A) + X(A,
140 NEXT E
150 NEXT A
160 PRINT "OAK"
      S(2); "ELM" S(3);
      S(4)
170 END
```

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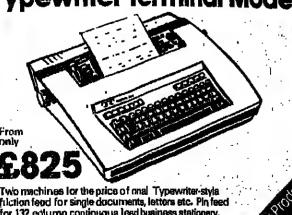
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Row brewing over Mirror technology

BITTER rows are in danger of blowing up between Linotype Paul and its customers in several countries as difficulties persist with the operation of computer-driven newspaper page makeup systems, such as that at the Daily Mirror (CW, May 31).

Firms in other countries are reported to be unhappy with their Pageview systems, and are blaming Linotype Paul's software.

Recently, Percy Roberts, chief executive of Mirror Group Newspapers, announced the group was giving up attempts to assemble pages on screens and was reverting to manual paste-up of photocomposer output, pending resolution of difficulties that were causing "serious delays" in production.

Mirror staff feel that while the equipment can produce simple, "slabby" pages it is inadequate to handle the Mirror's elaborate eye-catching layout. The machinery takes a very long time to produce such output, but the human operation is also slow.

There are also functional flaws, they claim. For instance, the storage screens can only display six different type founts, and these have to be used to represent all the other printing founts that are used for headlines.

It sometimes happens that a finished page can look perfectly all right on the screen but when produced on paper, lines of type are found to be overlapping.

A Linotype spokesman claimed however that both the hardware and the software were perfectly adequate, and the problems were caused by the paper's management policies and incorrect operation. Mirror staff had not been adequately trained, he said. "Our equipment works," he asserted. "We have over 200 installations."

A joint working party has been set up by the Mirror and Linotype to try to find solutions. The Linotype spokesman expressed confidence that the page makeup system would be working satisfactorily within three months.

The Mirror's management have partly been waiting for Linotype to come up with answers, and partly been trying to improve matters by on-the-spot modifications to software.

Being at the "point of need" they have in some ways found this easier to do than Linotype would have, but they cannot deviate too far from the basic software for fear that the next version will then not fit.

Tape is cut at Memorex HQ

THE new headquarters of Memorex UK was formally opened in Staines last week at a ceremony which was attended by local dignitaries and businessmen. Memorex House, in Church Street, Staines, includes a large warehouse for imports.

Managing director of Memorex UK, Mike Kitching, explained that after the acquisition of Telex in 1978, the company needed substantial regrouping, and the move will bring together all the company's functions, including sales, repairs, training and administration, so that Memorex House would be the "nerve centre of all Memorex UK operations."

Memorex has branch offices in Bradford, Edinburgh, London, Manchester and Nuneaton.

APT language

A SUBSET of the numerical control language APT has been implemented for the GEC 4000 series. Called APT 4000, the software was developed jointly by the Rugby computer centre of GEC Machines and NEL at East Kilbride and is now being used for production work at Rugby.

Scicon's SW office

SCICON has opened offices in Weymouth at 43 St Mary's Street, to handle business in the South West, especially local Ministry of Defence work.

Honeywell names new support boss

HONEYWELL Information Systems has appointed Kevin Kennedy a director of the customer services division. He will report to Brian Long, who is managing director of Honeywell Information Systems and will have overall responsibility for the company's field engineering and support activities.

Kennedy joined Honeywell in 1964, and since then has held the positions of field engineering branch manager and northern regional marketing support manager. In 1975 he was appointed the first manager of the Honeywell branch which serves the Littlewoods organisation.

Most recently he was northern regional director of the data processing division. He will be based in Bromford.

BCS issues guidelines for teaching schools DP

IN an effort to alleviate the failure of many school computing syllabuses to keep pace with changing technology, a working party of the BCS Schools Committee has produced a pamphlet for teachers listing the basic topics that it feels should be incorporated as a priority in all school curricula.

The working party was concerned, according to chairman David Tinsley who is computing inspector for Birmingham schools, that teachers now with their limited experience, were not equipping their pupils properly to deal with the very different technological world of the 1980s. Thus the topics chosen were fundamental ones, by and large independent of technical factors.

Among the topics listed are the concept of input-process-output; automatic control of processes; the use of software packages; information storage and retrieval; the cashless society; computers and people; communications systems; and, computers in the economy.

Also mentioned is "Computer manipulation of text, number, picture, and spoken word". This deals with teletext and viewdata, office systems, and CAD. Artificial intelligence is also listed as a topic, as is the effect of computers on employment.

Tinsley emphasises that the working party is not laying down a syllabus; it is up to the ingenuity of teachers to decide how to incorporate the suggestions into their own courses. It is felt though that every student should be exposed to the topics, whether in computing courses or as part of other subjects.

West Centre Hotel is venue for viewdata exhibition

DESIGNED to attract potential viewdata users and information providers at a time when mass production of viewdata television sets is properly under way, and Prestel is in full service, the Professional Viewdata Exhibition is planned for November.

Sponsored by Viewdata & TV User, a sister magazine to Computer Weekly, the exhibition is supported by Avip, the Association of Viewdata Information Providers as well as the Post Office, the Central Office of Information and the Department of Industry. It is to be held at the West Centre Hotel, London, on November 7 and 8.

Exhibits will include editing equipment, private viewdata and teletext systems, microcomputers for running telesoftware and a variety of user terminals. Peripherals are expected to include printers, bulk storage devices such as cassette recorders and floppy disc drives, keyboards and graphics design aids.

Inquiries are invited from potential exhibitors by the organisers, Illife Promotions, Dorset House, Stamford St, London. SE1 9LU. Tel: 01-261 8865.

Mathematica, NCSS deal to market Ramis on 3200

A VERSION of the database management system Ramis II that runs on the National CSS 3200 has been developed by Mathematica Products Group. Called Ramis 3200, it runs under the NCSS operating system VP5.

The software will be marketed in conjunction with the "super minicomputer" by both NCSS and Mathematica, under an agreement permitting each company to sell both products.

As Ramis II has been widely installed by service companies and bureaux, one obvious market for the system will be service company clients whose level of usage now justifies an in-house machine.

The software could also prove attractive for distributed processing applications, permitting Ramis II applications to be offloaded without change from a mainframe to one or more satellite minicomputers.

GILB'S MYTHODOLOGY

Advantages of the checkword

THE checkword technique is well known to the general public, but little understood and practised by computer specialists. I have applied it extensively for almost 20 years, and can highly recommend it as a means of helping detect and even automatically correct input data errors.

The general public knows the concept well as it is used in postal addresses. Using my own address as an example, my postal code is 1410 and the name of my community is Kolbotn. Kolbatn is a checkword for the code 1410.

When writing a bank cheque we write the amount with numbers, for example "1,000" and then we protect the cheque against accidental or deliberate error by writing a checkword (no pun intended) "One thousand".

The name "checkword" is intended to force a mental comparison with the well-known check digit method. Both methods will detect the same group of accidental (keying and handwriting and data-transfer) errors. Depending on how independently of the identifier you gather the

checkword, checkword designs will give you a means of making sure not only that the identifier is "valid," but that it actually refers to the real world object which the user intended it to refer to. In one thoroughly audited accounting system, we found that two-thirds of the account number errors we caught had valid check digits, but were incorrect account numbers. Many of these could probably have been caught by means of a checkword.

The only other advantage of check digit methods is that the checking process can be carried out offline to any sort of file. It is a pure and simple numerical consistency check. In cases where this advantage has been important, I have designed a combined check digit and checkword identifier. The check digit method captures some errors early, such as a keying mistakes. Then the checkword method is also used to give us assurance that we have indeed identified the product, customer or account which was originally intended.

A checkword does not have to be a long word. I frequently use two characters, often about four characters and rarely more. The more you do use, the greater the error detection and error correction power you have. In extreme

when we dialled a number. We would still dial a lot of wrong telephone numbers, and need to verify the correctness of them by asking for the name of the person (the checkword) we wanted to speak to.

The primary requirement for checking a checkword is that we have a # file (table or database will give nicely too) so that we can match the input against the correspond- ing file checkword. In batch processing applications, this means that we don't know about some errors until well after the data has been manually keyed in. Now if knowing immediately is critical, then we should probably go online with the data capture process. Otherwise, it is better to discover that you have an input identifier error late, before you update a file, than not at all or after you have updated it.

cases we design the checkword so that it is unique. This rarely costs more than 4 to 6 characters. But even with total failure or destruction of the main identifier, it gives 100% probability of fully automatic correction to the intended identifier. The unique checkword is simply used as the search key.

In some cases a checkword is purely numeric. In specific instances I have used the price of a product; the birth date of a bank account holder; or the telephone number of medical doctors, as checkwords.

One highly technical view of a checkword is that it is a case of "distinct repetition." I'd better hasten to define the terms. Repetition is serial (but not necessarily continuous) repeating of a term, such as is customary with the numbers in a telegram. For example, using my telephone number "80 16 97 801697". If a single digit is incorrect or digits are transposed, then I can detect

this by comparison. In the telegram case, I consciously introduced one type of distinctness by using spacing between digit pairs in one number but not in the other. The telegram introduces a kind of distinctness by repeating numbers at the bottom of the telegram.

For even stronger protection against "parroting" errors, we can introduce even more distinctness into the design. For example "80 16 97 GILB". In this case multiple parroted errors (70 16 97 701607) are almost certain to be detected (80 /6 97 G/LB) as are most other common errors (80% of errors are single-digit ones in some investigations).

In addition, there is more information to develop a correction hypothesis, often one which can be developed and tested automatically. But, frequently, one is developed which can be evaluated with a little human help, by selecting from a short-list of possibilities.

The checkword method has a number of advantages which space does not permit me to explore here. It is easy to add on to existing systems. It is highly applicable to almost all identifier design situations. But we have described it thoroughly in a chapter of our Humanised Input book (Gilb/Weinberg, Prentice-Hall).

I hope the reader of this column has been provoked to review the theory of checkwords, and to try out their application in practice. If you think it won't work, or work improve your applications, then I suggest that you have NOT understood the method. Try again!

PROGRAMMER NOTES

How many of your applications are really necessary?

IS the much-discussed shortage of DP staff genuine or is it a by-product of excessive — and unnecessary — computerisation? This is the question raised by a reader from Coventry, who appears to think that many DP applications are redundant.

"The mythical man on the top of the Clapham Omnibus could, after perusing the back end of Computer Weekly, reasonably deduce that the supply of programmers was falling far short of demand.

"But perhaps we should examine whether the demand is greater than it need be. Historically, many users installed computers because Fred down the road did one. When the beast arrived, a decision had to be made about what to use it for.

"'I know! Let's put the payroll on it' must have been a common answer. This application was usually followed by stock control, production control, general ledger, etc.

"This generated the need for bigger systems which, in turn, generated a need for databases and other software tools to make the bigger systems more manageable — and for the programmers to maintain them.

"I don't doubt that some programmers are needed for maintaining existing systems, but how many programmers and DPMs can put their hands on their hearts and say: 'These new applications are vital to the profitability of the company'? Not many, I fear.

"Computer software seems to follow Parkinson's Second Law, in that income rises to meet expenditure. In the DP context, output of software rises to meet the capacity of new hardware.

"Many DP departments would be more efficient if they bought most of their software, off the
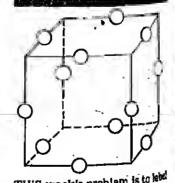
prog, and the need to obtain authorisation for the purchase might lead to an examination of the real need for the application.

"All this leads me to believe that there is no shortage of programmers, but too many installations running too many applications which have little or no use.

"Perhaps the industry doesn't want to discuss this issue?"

Programmer Notes is a forum for the discussion of both technical and non-technical matters related to programming. If you are an applications or systems programmer and have views on this issue or any other aspect of programming, please write to: Programmer Notes, Computer Weekly, Dorset House, Stamford Street, London, SE1 9LU.

Puzzler

Matching the structures

ONE interesting point made at the meeting related to the management of 2900 communications. The facilities, it was noted, are closely integrated with VME/B as a whole. It was noted therefore be a mistake to create a team solely devoted to communications services.

Instead, the management and support structure should match the structure of the product.

Scope for tuning VME/B is significant

LIKE IBM's MVS, with which one speaker compared it, VME/B offers considerable scope for tuning. Ian Battersby, of W. H. Smith, emphasised that major savings could be made in resource use by both TP and MAC with relatively little effort.

"It's very easy to generate a 1½ Megabyte application using TP Option. The extravagance, though, is superficial as it's fairly easy to reduce a typical application to between about 500K and 700K.

"Although it depends on the transaction rate, we find that a fairly average TP application code. There is thus lots of scope for tuning at the system level."

Battersby also noted that it had been possible to have the response time on one application by reconsidering the object program collection strategy.

"MAC is also amenable to tuning, particularly by adjusting the main store quota. This is a trade-off of virtual storage overhead against size, making it relatively straightforward to save significant percentages of OCP time."

W. H. Smith, he noted, ran with a MAC concurrency of between 10 and 16 for program development during the day and had settled on a quota of 144K. This took around 3.5% of the OCP power of a 2970 per session.

His general conclusion was that the sophisticated scheduling algorithms in VME/B made it perfectly possible to run a mixture of batch, RJE, TP and MAC services quite adequate for most commercial users.

ICL's telecoms offerings still pose problems for users

AS usual last week's meeting of the 2900 Club was both entertaining and informative. It addressed itself to "Communications Excellence?", concluding that ICL's standard offerings in this field still posed problems for the user.

In some areas, it was argued, VME/B communications facilities were incomplete; where they did exist, they suffered from unreliability and were in the main adequate rather than excellent.

One of the key continuing problems is the VME/B line handling software Kommfy, which ICL confirmed it was rewriting at a 2900 Club meeting early last year (Software File, February 16, 1978).

Describing telecommunications as the "greatest heartache" of the large 2900 systems, Roger Wallhouse of BOC Datasolve said that it was a great

disappointment that Kommfy Mark I was still in the distance.

Telecommunications, he said, was the key to the future use of the 2900 series both by bureaux and by large organisations generally. Unless the 2900 had an edge in software, it would lose out to IBM mainframes because of the wide availability of IBM-targeted application software.

The subject of Kommfy was also raised by Ian Battersby, of W. H. Smith. It was, he said, "old and very fragile" and was one of the main obstacles to attaching new terminal types.

"There is a lot of interaction between the different parts of the package, which can lead to interference. If you succeed in attaching a new terminal, it's quite likely to bring down one of the existing ones."

Further emphasising the lack of resilience, the loss of a line for whatever reason would frequently leave it unusable until VME/B was re-loaded.

"A major problem with the communications system as a whole is that diagnosis is remarkably difficult. The chances of getting any diagnostic out of the system are very remote if it goes down, and it's very hard to trace where the error occurred."

Although recovery time was in part determined by the time spent on diagnosis, a recovery time even as good as 20 minutes took a lot of work to achieve. Combined with a mean time between any system failure of around eight hours, the best online availability that could be hoped for was about 90%.

This, though, was perfectly adequate for many commercial applications, including those being run at W. H. Smith.

Later in the afternoon, a call for users to work more sym-

pathetically with ICL on remedying software deficiencies prompted Roger Wallhouse to identify three areas in VME/B and the communication subsystem that should be strengthened.

The first, he said, was the addition of a personal computing facility. There appeared to be no plans for such a facility and its omission was a fundamental weakness seriously limiting the usefulness of the 2900 to large organisations.

Users should also press for improvements in IDMS, TP and multi-access. They had here, he noted, more chance of success with ICL than with other major mainframe manufacturers such as IBM.

Finally, there was scope for joint ventures to develop application software and utilities. For applications such as accounting and management information systems, there should be considerable scope for meeting common requirements with a package.

As evidence of the potential market for utilities, he already knew of more than one package under development for tape library management.

Interested parties

UNLIKE the official ICL user association, membership of the 2900 Club is not restricted to those who already own or machine or have one on order. According to a recent membership survey, only 53% are existing 2900 users with a further 35% being prospective users. Topics of chief concern to members include performance (61%) and ICL policy (68%) according to the survey.

Praise for TP Option not extended to MAC and RJE

VME/B's TP Option was alone singled out for praise by Ian Battersby in an illuminating review of the three main VME/B communications subsystems in use at W. H. Smith's.

Both its facilities and its usability were good, he said, whereas those of MAC and RJE could at best be described as adequate.

Although W. H. Smith had so far used TP Option only for file inquiry applications, it had found in the software all the essential facilities needed to write commercial TP programs. Further, all the facilities needed had worked.

"Programming the applications was straightforward and the Cobol interface was simple, though not standard. The package provides a good batch-oriented testing envelope, enabling one to drive a stream of test transactions through the system before going to online testing."

Comprehensive facilities were also available in the system programmer in such areas as resource utilisation and response time tuning, and file integrity and security.

Both MAC and RJE, on the other hand, provided little more than a basic window into batch facilities and their usability suffered as a result.

"MAC, for example, provides the same editor as in batch, and so makes no use of the full capabilities of the screen. Similarly, the diagnostics are batch-oriented and consequently ill adapted to screen working, in particular by being too verbose.

The terminal facilities worked well, he said, with ICL equipment and were well integrated with the System Command Language. However, it was a "long uphill slog" with other devices except in the case of teletype-compatible equipment.

"The usability of RJE is primitive, as it gives the operator poor visibility on to his own job. Oddly, he has a much better

view of other people's work and can both see and interfere with other jobs, creating a security problem."

"These problems can be overcome, though, with user system programming.

"In general, I can't describe 2900 communications as excellent," he concluded, "but for our purposes, they are adequate."

By Bernard Allen

Ex-TOPS student's job satisfaction

AFTER experiencing some initial problems, former TOPS operations student Steve Ward is now settled and getting on well in the computer industry.

He is employed as an operator at the Sevenoaks site of Jermyn Industries, having been forced to leave the Banker Automated Clearing Services Edgware installation because he was unable to find accommodation in the North London area (Op Spot, May 24).

"There's a nice, family-like atmosphere at the site and I'm really pleased to have got the job, particularly after the problems I had in London," said Steve, who met me in London the other week to discuss his progress in the industry.

"The junior partner of a two-man team, he works an eight-hour, three-shift system five days a work, with some overtime at weekends.

They operate a Univac 90/30, running under the OS3 operating system which, according to Steve, "calls for a minimum of intervention on the part of the operator."

Satisfied customer

PETER Aken, a senior operator at the Burton-on-Trent site of Pirelli, contacted me to discuss the IBM OS pseudo-writer — a facility which, effectively, causes the system to erase unwanted output.

So I sent him a copy of an Op Spot piece on the subject (CW, July 13, 1978) and was pleased to learn that he had few problems in adding the writer to his system.

He told me, "With the help of our software programmers, I was able to add the writer to our system in less than a day. I learnt a lot doing it, too.

"It saves us on awful lot of stationery and the junior operators are particularly pleased with it because they have less work to do on the printers."

it. The company put us up in a hotel for two weeks — that was great."

The BACS installation, with its three ICL 2950s, two ICL 1904S systems, and eight-men shift teams, provides an interesting contrast with his present site.

"I liked it at BACS and would have stayed there if I had been able to find a place to stay in the North London area. But, in a way, I'm glad I moved because the Jermyn site is run on more informal lines.

"For a start, I am now a part of a small team, and that means seeing jobs through from start to finish, which gives me a considerable amount of job satisfaction.

"And at BACS we had to wear a suit on the day and evening shifts, whereas now I can dress a bit more informally. I prefer that."

But his working environment will change a bit very soon, because operators are soon to be hands-on, under the supervision of the shift leader.

Said Steve, "We're getting a course during his short stay at BACS in Edgware. He continued:

"I went on an ICL 1900 course for beginners, held at ICL Letchworth, and I quite enjoyed

Steve was, in fact, sent on a course during his short stay at BACS in Edgware. He continued:

"I went on an ICL 1900 course for beginners, held at ICL Letchworth, and I quite enjoyed

Steve Ward

Asked for his reflections on the TOPS operations course at Borehamwood College, Steve replied, "It's been of real value to me, it really has. For example, I learnt about the hexadecimal numbering system which I have to use to make system diagnostics when a system halt occurs.

"I've got one complaint, though — all the pubs around the Borehamwood area seem to have Ind Coope bitter, whereas Whitbread is my favourite," he added with a grin.

The company is also to provide a rest-room for the operators. He continued: "We're pleased about that. We already

Poor printing with ICL 1933s is ops' fault, says bureau director

"THE common reason for poor print quality with ICL 1933 printers is failure by the operators to make routine adjustments."

Thus Gerry Mills, managing director of Milla Associates, a group of computer bureaux, responds to some comments about those printers from David Millar, a shift-leader at the Imperial Group in Bristol (Op Spot, May 10).

"You repeated a popular misconception amongst operators concerning the print quality available from the ICL 1933 printers," he writes.

Gerry Mills

Supporting his views, he continues, "My company both maintains and uses many line printers of this type, some of which are over ten years old."

He concedes that the design of the ICL 1933 "precludes" high print quality, but points out that "reasonable print quality" can be maintained without too much attention from engineers, provided that the printer barrels and hammer trays are frequently replaced.

"If a DP manager must have reasonable print quality from his ICL 1933 and is prepared to pay for it, we know that it can be provided," he adds.

Phasing out of shift allowances

SOME time ago I reported Barclays Bank International's plans to implement a scheme intended to help staff overcome the loss of allowance in the event of moving from shift work (Op Spot, March 22).

On that occasion, I mentioned hearing about proposals of schemes similar to Barclays' —

which involves phasing out the allowance over a nine-month period, rather than stopping it as soon as the operator comes off shift — but said that none were ever put into practice.

In response, Brian Rees, an operator with Prudential Assurance, writes, "As far as I can remember we have always been

able to phase out our allowance, should we get transferred off shift — and over a full three years, not just nine months.

"With our 20% allowance most of us are getting over £1,000 per year from shifts, and if there wasn't such a scheme I doubt if any of us would be able to move."

Using the IBM OS operator commands—Cancel

IN past Op Spots I have given an overview of the IBM OS operating system and discussed certain parts of it — the reader, writer and initiator procedures — in greater detail.

And starting this week, I intend to give further attention to the OS operator commands, some of which can be used in a number of ways. Although these discussions are intended primarily for persons with little or no IBM OS experience, I would welcome comments from operations staff familiar with the system.

The CANCEL command.

By means of this command, the operator can abort a job at any stage of its processing. The word "cancel" may be abbreviated by the letter "C" and the command has the following format:

C XXJOB1

When the above command is entered by the operator, the system will look to see if job XXJOB1 is actually in store and if it is, will abort it.

For the system to produce a dump along with the job control language listing of XXJOB1, the operator must tag the word "dump" on to the end of the command, thus:

C XXJOB1,DUMP

If the operator has to cancel it at input stage from, for example,

input queue "A", he enters

C XXJOB1,IN=A

To cancel it from output queue "A", he enters

C XXJOB1,OUT=A

It is also possible to cancel a job which is actually in the process of being printed. To do this the operator specifies the address of the printer being used or the identifier of the writer. For example:

C 00F

System procedures, that is, readers, writers and initiators, can also be cancelled by the operator, but only when they are at the initiation, or starting, stage.
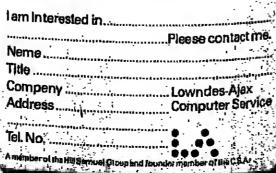
This facility proved to be extremely useful on one occasion at a site where I was once employed as an operator. One of the staff had tried to start a writer to a printer which had already been allocated as hardcopy log to the TP network which ran throughout the day.

The writer became stuck in the system, with the results that several members of the technical support team were called to the computer room. They were about to cancel the TP network, an action which would have caused the users considerable inconvenience, when one of the operators suggested cancelling the writer and thereby saved the day.

X25 software with new VME/B

HEADING the list of new software with the new ICL machines is the 5X36 release of VME/B, available for Spring 1980 installation.

It includes an X25 implementation for attachment to Euronet, Transpac in France and the forthcoming UK Packet Switched Service, and ICL claims that it provides an efficient combination of batch, MAC multiple access for program development, teleprocessing, and RJE.

The new TPMS transaction processing enhancement is available under both 5X32 and 5X36, and new features to aid security of RJE systems and to enhance error recovery are included in the new release.

The 2956/10 becomes a linch-pin of the product line, since it runs VME/B, previously only available on a large 2960 and above. The 2956/10 needs almost 1½ Megabytes to run VME/B, and ICL says it has been introduced principally for people who want to begin distributing centrally developed applications

around several sites.

However, now that VME/B is available on all but the 2950/10, the importance of VME/K is somewhat diminished. VME/K is currently running at about 20 ICL sites.

The 2956/10 also runs DME/George 3, DME/2, DME/3 and DME/System 4; people wanting to use DME/System 4 have to go to the 2960/10.

When originally announced, the smallest 2960 cost £520,000, and it would have cost nearer £1 million to run VME/B, so the entry price for the large-scale operating system has been reduced dramatically; the concept of distributing centrally developed applications around regional sites follows the policy of IBM with the 4331 and 4341; however, VME/B is ICL's answer to MVS, and IBM of yesteryear had nothing comparable with the 2956/10 on which to run MVS; the nearest thing would be a 370/148, which adequately supports MVS.

ICL is very pleased with its

new simplified IDMS subset, IDMS-E, which is cheaper and easier to use than the full version and is aimed at 290X users who have hitherto regarded databases as outside their orbit. It includes a cut-down version of the Data Dictionary System, which was hitherto only offered on the larger machines, and is, says ICL, a product which could be sold back to Cullinane, the originators and licensors of IDMS, for wider marketing.

ICL is striving for a common system superstructure across VME/B, VME/K and the various DMEs, and has made a start with Range Cobol, based on the VME/B Cobol compiler. Other Range compilers are coming and the company is also trying to increase commonality in teleprocessing management systems and file structures and formats.

UK business in first half at highest level ever

PARTICULARLY strong business in the UK was a feature of ICL's first half, in which the company returned pre-tax profits of £18.8 million on turnover of £285.1 million (CW, May 31).

The company says orders in hand are the highest ever, and believes that both government spending cuts and the deteriorating business climate will lead to increased demand for computers; one-third of its UK business is with public sector organisations, taking in national and local government and 100% nationalised industries.

ICL has been trying to get research and development expenditure down to the industry average of 7% to 8% of turnover, and it is in reach of its target, implying an R&D investment this year of about £55 million.

On the vital services front, the company now has 400 full-time lecturers and is building a strong training presence in continental Europe, with centres in Paris,

with its new 9500 point of sale terminal, but regards the present maintenance agreement with TRW as unsatisfactory in that the US company is a competitor in the point of sale market.

Loss-making last year, the US operation, the Utica, New York factory is a vital ICL outpost, now contributing 15% of the hardware manufactured by ICL.

The inflation element in ICL's figures is put at no more than 3% half-year on half-year, which means that the company has a real growth rate of over 20%, well in excess of that of the industry as a whole. On the half-year figures, Graham Meek, electronics companies analyst at stockbrokers Wood Mackenzie, looks for a profit of £48.5 million on turnover of £630 million on the full year at the end of September.

Tom Hudson — Hopes for PoS sales in the US.

The Hague and Frankfurt, while the group's software company, Dataskil, has doubled its business over two years.

Chairman Tom Hudson is hopeful that the company will achieve a foothold in the US

2982 double price/performance claimed

WITH the new additions announced over the past two weeks, the ICL 2900 line now consists entirely of new processors; the original 2970 processor was pensioned off last year, and the 2980 and 2960 are only being built for users wanting to add another processor to an existing configuration.

The 2982 ranges in price from £1.25 million for an Order Code Processor, one SAC store access communications controller, one SMAC store multiple access controller, and four Megabytes of memory, to £1.75 million for a similar configuration with 16 Megabytes.

ICL's memory is actually cheaper than that offered by IBM on the 3030 series; ICL is charging £60,000 for two Megabytes, whereas IBM's US price for 3030 memory is $70,000 per Megabyte.

The SAC, SMAC and store is common across the 2960/10, 2972, 2976 and 2982, and each machine is available with one or two OCPs, SACs and SMACs. A single processor 2982 matches the 3032, and a dual processor matches a uniprocessor 3033.

ICL claims that the 2982 offers double the price/performance of

the 2980, a key feature of its design being an integral 16Kbyte cache memory which is integrated into the processor contiguous to the arithmetic unit to avoid contention for the cache from input-output requests.

ICL is also promoting the power of the Distributed Array Processor, DAP, when coupled to the 2982; the combination allows a system with up to 40 Megabytes of main memory to be assembled. The first DAP is set for delivery to Queen Mary College, London in December.

The next processor down is that used in the 2972 and 2976; the former is now offered with up to 12 Megabytes and the latter with 10.

Next comes the new 2960/10, which is the biggest to offer microcoded emulation; the top two processors are hardwired. It is claimed to be 10% faster than the 2960 and offers four times the main memory — up to 8 Mbytes.

The smallest processor is used in the 2950/10, 2956/10 and 2905; the 2956/10 approximates to the power of the 2960 as originally announced, and field-upgrades are possible from a 2905 through to a 2950/10.

Dataskil rates 2972 close to 470 V/6

SOME interesting figures suggesting that a 2972 could be comparable with an Amdahl 470 V/6 were presented by Roger Wallhouse, of BOC Datasolve, to the course of a discussion on the 2900 as a bureau machine at the ICL 2900 club meeting last week.

BOC Datasolve is in the rare position of being able to compare the performance of a variety of large mainframes, as it is currently running not only a 2972 and 470V/6 but also a 370/158 MP.

The following formula was devised to provide the comparison figures. The power of a machine in mips = million instructions per second, is measured against the cost in pounds. Thus the 2972 delivers 140 mips

against a cost of £0.9 million. Cost is divided by MIPS to give the power unit.

According to these price/performance figures, the 2972 and 2972 compete closely for the distinction of "best buy", being rated at 1/79 and 0.43 respectively. By contrast, it rates a 2970 at 12.73 and the 158 MP at a disappointing 32.05.

A 3032 it rates at 19.00 while a 3031 comes in at about the same figure as a 2970.

The figures, which dramatically highlight the attractiveness of the 2972 over the 2970, are backed up to some extent by Computer Resource Unit, CRU, measurements for comparable jobs. Wallhouse admitted that the charging algorithm could well vary a little.

PEOPLE AND EVENTS

Geest reorganises top management

GEEST Computer Services has announced several organisational changes, which include the creation of a management board and two divisional boards.

The management board will direct policy, planning and financial matters and Dr Colin Cooke will be a member, continuing in his role as non-executive chairman. Clifford Vivian, who is chief executive of the parent company, the Geest Organisation, will participate as vice-chairmen of Geest Computer Services.

Philip Walewright will continue as managing director with executive responsibility for the overall management and co-ordination of Geest Computer Services. Graham Gough becomes development director.

The two divisional boards will report directly to the management board, and will each be responsible for operational control and co-ordination of their respective divisions. Philip Wainwright will be managing director of the bureau division board; and Derek Bilby, who is managing director of Cambridge Computer Services, Les O'Reilly, director of Eastern Computer Services and Denis Churchill, managing director of Midlands Computer Centre, will also assist on the board.

A new data products division will be formed under Graham Gough as managing director, and Philip Wainwright will also be a member of this board. The division will be made up of the existing Geest Minicomputer Systems, and a new division, Geest Microsystems.

Geest is aiming at two major market segments in the new operation; major users who wish to enhance the responsiveness of their existing mainframe operations, and small users who need local intelligence to utilise a comprehensive range of packages.

Ian Hillier-Brook has joined the financial systems division of Gamma Associates. He was until recently market development manager for Data Recording Instrument Company, working at the company's headquarters in the US.

Paul Williams has been appointed as division director of personnel resources for NCR. His previous position with the company was industrial relations manager.

Ted Litton has been appointed as managing director of Rochford-Thompson prior to the opening of the company's new factory complex in Hambridge Lane, Reading. Litton is a former financial controller and company secretary of Tibett and Britten.

Allen Brain has joined Tsudem Computers as a sales executive with responsibility for finance and banking. He was formerly a sales manager with Prime.

Karl Nightingale, a former marketing executive for the industrial products section of the Irish Export Board, has been appointed marketing manager for Mohawk Europa, based in Limerick, Ireland.

Girl Technician of the Year

TO focus attention on electrical and electronic engineering as a worthwhile career for women, the Caroline Haslett Memorial Trust and the IEETE will be offering prize money of £250 to the winner of their competition to find the 'Girl Technician Engineer of the Year'.

The winner will be an outstanding technician, chosen for having successfully undertaken the necessary technical education and having proved herself capable of holding a responsible job.

It is hoped that the competition will encourage other women to join the profession. The closing date for nominations is September 18, and details are available from Eileen Bhaldoe of the IEETE, on 01-836 3357.

Stavely Ferguson, a former systems analyst with British Airways, has joined Systemsolve (Computer Services) as a senior analyst programmer, and Simon McNall, previously with the British Library, has become junior analyst and programmer. William Leach, who was previously with Legal and General, has been appointed an analyst/programmer with Systemsolve.

Changes at Fluke

FLUKE International has changed the name of its Trendar division, and in the UK this group will be known as the Fluke Automated Systems Group.

Newly appointed to this division is Vic Collins, who will provide technical support for the full range of board test equipment. He recently joined the company from Marconi where he was UK sales and marketing manager for Zilog and for computers and support boards.

The address of the Automated Systems Group is at the company's new premises at Colonial Way, Watford.

Gareth Bennett, previously systems designer for the Royal National Institute for the Blind, has now been appointed manager of computer services. Since joining the RNIB Bennett has worked on computer translation of text into Braille.

Director of Plessey

PLESSEY Telecommunications has appointed a new director, Air Marshal Sir Herbert Durkin, to its board. He was until recently controller of engineering and supply for the Royal Air Force, up to his retirement. Sir Herbert will act as a technical adviser in the managing director of Plessey Telecommunications, Desmond Pitcher. The company is shortly to change its name to Plessey Telecommunications and Office Systems. Sir Herbert has held several senior positions and was director of engineering at the Ministry of Defence from 1967-69.

Fellowship

John Barnes, who is director of language research at SPL International's research centre, has been appointed an industrial fellow of Wolfson College, Oxford. This will be with the programming research group which is led by Professor C.A. R. Hoare.

Barnes is a member of the team which recently designed Ada, the future language for embedded systems.

Dave Goddard has become European service manager for Vector, in charge of the company's European engineering operations throughout Europe including the UK. He was formerly UK service manager.

Graeme Low has been appointed UK sales manager for the sales and marketing organisation of Beckman Instruments. He was formerly sales engineer with the company.

A lower accident rate than the national average within the computer industry has won as Industrial Safety Award for Data Recording Instrument Company. The awards are presented annually by the British Safety Council, and this is the fifth consecutive year that DRI has won the award, which entitles the company to fly the British Council flag over its premises for a year.

David Griffiths has been appointed product sales manager for liquid crystal displays with Hamlin. He joined the company as internal technical sales engineer in 1977.

Paul Fockens has been chosen to head Modcomp in the Netherlands. He has worked in the computer industry since 1966, in Europe and in the US.

CW soccer results

Division 1
Altargo 1, Gryphon 1
Atkins 2, SIA 3

Division 2
SBS 2, Comshare 5

Division 3
Computer Weekly 5, 3M 2
Computer Weekly 3, CJ6 1
Sharwood 4, UCSL 0

UCSL 2, Computer Wookly 3
CJ6 3, 3M 1

Division 4
CDC 1, Forest 5
Hoskyns 2, Wallorax 11
Jadpu '6' 2, Allen 2

Division 5
Vantak 2, Kingston 3
NCR 1, British Aerospace 4
Barrow 0, Gill & Dulius 3

DIARY

JUNE 11
Finding finance for the small business. CAST. Drury Lane Hotel, Drury Lane, London WC1.

JUNE 11-13
Technical study in legal information retrieval in Europe — symposium on results of the study. European Commission, and Council of Europe. Council of Europe, Palais d'Europe, Avenue de l'Europe, Strasbourg, France.

JUNE 14
Structured Programming. North East London Polytechnic, Barking, London. Details 01-509 5141, ext 49.

Simplicity and approximation in sequential pattern identification. H. Gaines, Oxford University, Keble Road, Oxford. 1600.

JUNE 18
World fertility survey: technical problems of international research, and AGM. Study group on computers in survey analysis. London School of Hygiene and Tropical Medicine, Keppel Street, London WC1. 17.30.

JUNE 18-21
IMMM '79 Exhibition and conference. London Chamber of Commerce. Geneva. Contact CBIT Land, London Chamber of Commerce. 01-248 4444.

JUNE 20
Who will use the general purpose computer? IOPM. Pearl and Dean Studio, Broadwick House, Broadwick Street, London W1. 18.00.

New approaches to systems analysis and design. H. Gearing. E. Mumford, OCS. Kensington Close Hotel, London W.8. 09.30.

Distributed processing. North East London Polytechnic, Barking. Details 01-509 5141 ext 49.

JUNE 21
Pattern recognition and flexible automation. J. Weaver, Oxford University. Nuclear Physics lecture theatre, Keble Road, Oxford. 16.30.

JUNE 30-32
FTCS-9, the ninth annual international conference on fault-tolerant computing. IEEE Computer Society, Madison, Wisconsin. Contact IEEE Computer Society, 5855 Naples Plaza, Suite 301, Long Beach, CA 90803.

Weathermen's sale boosts Cray profit

THE sale in February of the Cray I for the European Centre for Medium Range Weather Forecasting, at Shinfield Park, near Reading, Berks (CW, April 7, 1977), was the major factor in the $2,862,000 profit shown by Cray Research in the first quarter of this year. In the same period last year the company had a loss of $211,000.

John Rollwagen, president of Cray, said the company did not expect "this extreme high level

of earnings" for the rest of the year. However, the company has just sold a second 1 Megaword machine in the UK which should give the figures another boost.

This second machine is the Cray-I ordered by the Ministry of Defence for the Atomic Weapons Research Establishment at Aldermaston, Berks (CW, April 20, 1978). Estimated to cost about £6 million, the system was delivered and accepted in March and development work

that had been started on an interim 500K-word Cray, housed at the Rutherford Laboratory, is being expanded.

The 500K machine has now been moved to the Science Research Council's Daresbury Laboratory where it is being used to provide computing power to about 30 groups of researchers working on various projects (CW, May 10).

This same machine was also used by the ECMWF when that organisation was first established in 1976 (CW, November 11, 1976). It was for the Met men that it was installed at Rutherford, where there was a spare computer hall, so that work could start on the weather programs.

The ECMWF is now in its permanent home at Shinfield Park, and its Cray, front-ended by a CDC Cyber 175, is due to go into full operation next month.

Postcode in every home

COMPLETION of the Post Office's £50 million mechanisation programme for the postal services is now scheduled for the end of 1982. Vitally dependent on universal use of postcodes, the systems will have a boost over the coming 12 months, with every home getting a reminder

of its postcode.

The mechanised letter offices use a system designed around Hewlett-Packard minis.
• A Pentex export version of the standard TXE 2 reed relay small telephone exchange has been installed by the PO in the UK network at Warrington.

No trouble at mill...

PAPER maker Wiggins Teape is using telex-compatible Vitel VDUs (above) to transmit the details from sales forms to telex machines at its mills, while the printed form itself is stored locally on transparencies. The two are married up on receipt by overlaying the transparency on the telex printout and photocopying.

The Vitel VDUs supplied by ATS Communications, of Hay-

wards Heath, in a £23,000 order, are installed in 11 of the IX UK branch offices. They link to the mills via an existing ITT uni series ADX message switch already in use in the company's leased line telex network.
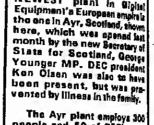
The VDU assists data entry by displaying prompts for each entry in the correct position on the screen, and messages can be edited before being sent.

NEWEST plant in Digital Equipment's European empire is the one in Ayr, Scotland, shown here, which was opened last month by the new Secretary of State for Scotland, George Younger MP. DEC president Ken Olsen was also to have been present, but was prevented by illness in the family.

The Ayr plant employs 300 people and 80 of DEC's own minicomputers on final assembly and test of models in the PDP-11 line from the 11/04 to the 11/70.

How to close the 'Software Gap'

Many businessmen have been disappointed by the information they receive for strategic decision-making. It is often too little, too late and too expensive.

Filling the gap between the ever-changing needs of the user and what computer systems provide is really the key problem—a problem we at Cincom have done something about.

Cincom's family of information systems software closes the gap.

First, give the end-user access.

Cincom's new T-ASK is an on-line interactive query facility for end users. Ad hoc and repetitive questions that once required special programming now no longer do.

T-ASK is a "user-friendly" system. With easy to use commands, the user gains access to the data he needs through his own terminal.

He has the data he needs, when he needs it and without additional drain on the data processing department.

A "user-friendly" system demands the most advanced DBMS.

Direct end-user interaction creates increased demands on the data base. As a result, Cincom has developed TOTAL 8.0.

You've heard of TOTAL. Well, TOTAL 8.0 is even better.

TOTAL 8.0 provides superior performance. It is fully multi-task, multi-thread, offers VSAM support, reduced CPU usage, and many other new facilities.

Where products and services come together.

In addition to T-ASK and TOTAL 8.0, Cincom Systems offers a full range of data base and data communications products that help close the software gap.

We also feature specialised application systems software and Custom Systems support.

These products and services are backed-up by a complete network of technical

product support, system engineering and educational facilities.

You don't need to live with the "Software Gap", just call on Cincom to close it.

New firms that combine skills predicted by NS

A NEW type of company that combines the skills of the semiconductor manufacturer with the capabilities of the systems house is the way to future success in applying microelectronics, according to Bob Heikes, international vice-president of National Semiconductor.

He was speaking at the recent Infotech conference on Microelectronics and Data Processing — the Next Five Years, held in London. It was an occasion on which he once again expounded his views on the block to future developments in micro-based systems currently put up by software, a view he forcibly expressed at last year's National Computing Conference in Anaheim.

The two existing sectors in the industry that he outlined are the pure semiconductor house, now moving rapidly towards the production of VLSI devices, and the pure systems or end equipment manufacturer.

To this he added the new third component, the Vertically Integrated Systems-on-silicon House, or Vish, in combination that National among other semiconductor manufacturers is rapidly moving into. It is also an area strongly addressed by a growing number of systems manufacturers, with IBM leading the way.

It is this combination that Heikes feels will prove to be the most successful in the marketplace.

He took as a starting point in his lecture the fact that the semiconductor industry will fairly soon be able to purchase in volume devices with one million active elements at a cost of tens of dollars.

"As time goes on," he said, "it becomes more difficult to differentiate the component from the system. The system becomes a piece of silicon in a box with its accompanying software. It can be differentiated at silicon or software level, or both."

The advantage that a Vish company has is the ability to do

both, and in any proportion it sees fit, he stated. "It can most rapidly adapt to the common force for change that is continually presented by the exponentially increasing capability of silicon technology."

The next question he addressed was which of the two "pure" operating areas would produce companies that were the most successful. Perhaps unsurprisingly, he came down on the side of the semiconductor company integrating upwards.

This was justified, he said, by the economies of semiconductor manufacture. A minimum wafer fabrication plant costs $20 million to put up, and must produce about $30 million output per year to be economic. In addition, this would only be running a single process.

If this product is predominantly for internal consumption by the systems house, he suggested that only companies worth $2 billion and over, solely in electronics, could effectively make the move.

A semiconductor company on the other hand has easier problems to face, Heikes claimed. For a start, the growing device complexity is leading many semiconductor manufacturers close to the systems area already, so the addition of suitable marketing skills for a full systems enterprise is far easier to acquire, for much of it is already available in-house.

The major problem area he sees for semiconductor companies is that of forming a strong software development group to support the systems operation.

And software of course, as Heikes has said before, is the big stumbling block to be overcome.

"Though the cost per function of semiconductor devices is fulling rapidly, the cost per line of debugged code is staying at least constant, and perhaps even increasing slightly, he said.

"This comes about because the intelligence per line of code is not increasing rapidly enough

to compensate for the ever increasing labour costs.

"A revolution in software is needed even to handle the immediately foreseeable generation of chips. Yet none is in sight," he said.

As an aside, he threw in the suggestion that the present ones, zeros, and sequences of logic statements currently used in the generation of software is the wrong way to go. "Certainly, the brain does not function that way," he said.

The subject of an alternative was however ducked as "the subject of another lecture, perhaps in another lifetime."

Users to get fruits of Apple's software labours

VOLUMES three, four and five of the Apple Computers Software Bank have now been issued by the company, together with a manual providing detailed descriptions and operating instructions for each of the programs carried.

The majority of the programs carried in the new volumes have been provided by users of Apple II computers, and include File

Cabinet, a personal directory and record keeping system; Character Generator, a program to label high resolution graphic images; and. Integer Basic Renumber/Append. In total, there are 25 user supplied software packages.

Also included in the new issue are two games from Apple. One, Microchess, is available under licence from the Personal Software Company, while the other, Apple Bowl, creates a simulation of ten-pin bowling.

The manual that accompanies the three new volumes is called the "Bonus Issue". It carries extensive documentation on the new programs, and is partly intended to help establish good programming techniques among users.

The user contributed programs from the software bank should be available from most Apple dealers, with users supplying their own blank diskettes or cassettes for copying the programs.

Two micron geometries claimed

THE magic figure of under 2 micron geometries in semiconductor manufacture has been achieved in a standard 8-bit microprocessor by NEC-Toshiba Information Systems in Japan.

In fact, engineers at the company have been involved in producing a shrunk version of the device from its standard 4 micron geometries down to 2.8 microns. This involves photographically reducing the mask set used to manufacture the device, and is a common technique in the industry.

In carrying out this work, however, internal channel lengths in the micro have been reduced to 1.6 micron.

Though the company has declined to state which microprocessor has been shrunk in this way, it has indicated that it uses the instruction set of a device which was commercially, it is quite possibly this micro on which the work has been done.

Performance of three Intel packages doubled

THE performance of three software products used in developing 8080/8085 microcomputer programs has been doubled by Intel.

They are Version 3.0 of the 8080/8085 Macro Assembler, and the Link and Locate packages of the Isis-II disc operating system used on the company's Intellec Development System.

The new Macro Assembler allows program assembly in half the time formerly required by translating assembly language mnemonics into relocatable object code modules.

This allows program addresses to be referenced with symbolic names and makes it easier to modify programs. It also allows similar sections of source code to be written only once.

The Improved Link package speeds the combination of code written in any of the languages available on the Intellec system, including the Assembler, PLM/80 and Fortran/80.

The speed improvements have

also been carried through to the Locate package, which is used to convert relocatable object modules to an absolute memory format for execution in the microprocessor.

Scope of DiY show extended

REFLECTING the shift in microcomputer thinking and potential, the Do It Yourself Computer Show has been extended beyond the hobbyist to address the use of microcomputers by businessmen of all kinds.

To be held at the Bloomsbury Centre Hotel in London, from July 5 to 7, it will combine an exhibition of relevant systems with a series of seminars covering both business and personal use. Further information can be obtained from Online Conferences, Cleveland Road, Uxbridge.

Improving your system tuning and capacity planning

By Nicholas Enticknap

LAST week we carried an article outlining the various computer performance measurement techniques a DP manager can adopt. Now Nicholas Enticknap (pictured left) follows up with a report of the experiences of four users who conduct regular performance assessments.

IT is always a good idea when evaluating any new technique or product to get in touch with a few existing users to get the benefit of their experiences. With that in mind we contacted four installations which have in various different ways made use of performance measurement techniques.

The Bank of England serves as a good model of what can be achieved with the methodical approach. Two years ago, a decision was taken to set up a planning and performance group as n separate entity within the central software function. The group's brief was to accept responsibility for performance measurement and capacity planning functions, and also to investigate any new software which might be of value to the bank.

In this case the installation management already recognised the value of performance measurement. The effort put into it, however, tended to be rather sporadic, as the software staff were constantly being diverted on to whatever was the installation's most pressing development effort at the time. As a result they decided to form a dedicated group of three specialists.

This group approached their work cautiously, doing a careful evaluation of the hardware and software monitors available, and attending an Ecoma conference to find out what other people thought. They concluded that the best answer for the bank's particular circumstances was the purchase of a software monitor.

The installation is medium-sized, with a configuration based on a two Megabyte IBM 370/158 and a two Megabyte 370/148, and a workload consisting of a mix of batch and online applications.

The performance group now does a regular in-depth investigation of the installation's performance about twice a year.

ONE user which does have a hardware monitor is British Leyland, which uses a Tesdata MS88. This was acquired in the context of a decision to centralise DP operations from five or six different data centres into a single centralised site. This, as might be imagined, was a highly complex operation, but the corporation achieved its target conversion dates ahead of schedule, according to British Leyland's Clive Tristram.

Tristram said: "If you're seriously into making money out of DP you've got to get into performance measurement," and gives examples of how the monitor facilitates fine tuning. The MS88 comes with a real time graphics display which

management as well. They take an interest in the trends depicted by the figures, and follow indicators such as the number of unscheduled IPLs, the proportion of jobs on IMS meeting target response time, and so on.

To summarise the efforts of the performance measurement team so far, the group have contributed to the bank. As Keith Batt of FCS puts it:

The performance group now does a regular in-depth investigation of the installation's performance about twice a year;

enables the operators to take in at a glance the state of the system.

The display might show, for example, that the CPU is being used 100%, the supervisor is similarly working 100% of the time, while one channel is being used 40% and the rest are idle. This would indicate a supervisor loop, and the operator would re-IPL the job.

Another way in which the British Leyland monitor has proved valuable is with the disc systems. As each disc controller can be accessed by up to four months' work, British Leyland reduced the spread to within 15%, with the least used being occupied 10% of the time and most used 25%.

each one takes three or four weeks to complete. In addition, a week-by-week analysis is performed. The data accumulated from this work is used both for tuning and for future capacity planning.

The emphasis of the work is on looking at where the CPU time goes. An important ratio studied by the bank is that between program time and CPU time; over the past two years this has shown an increase of about 10 per cent.

The results of the studies are followed not just by the technical staff, but by the installation

ware growth. This led to a decision to formalise the capacity planning operation. The initial emphasis was on software monitoring, but a few months ago the company decided to commission a study from an independent consultant, using a hardware monitor.

When Knight first joined the bank the installation comprised an IBM 370/155 and a 2081/50; now the hardware is based on two 370/158 APs and a 3032. During the same period telephone processing systems have been introduced, and they are all now thoroughly integrated with one another.

As Knight says, that kind of operation puts a premium on reliability, and the best way to achieve that is to resolve performance problems before they reach significant proportions. This requires constant vigilance, as well as considerable expertise to interpret the results obtained. In the bank's case, Knight says that they have achieved excellent results, resolving all sorts of problems which were anything but obvious.

The bank's measurement work is all software based, using quite a lot of different packages. No matter how good they are, says Knight, none of them is ideal, so you need an in-house staff.

verted what was a random function into a planning function, which in itself a desirable achievement.

Another medium-sized installation which has adopted a rather different approach is Freight Computer Services, which runs a computing facility for the National Freight Corporation. The company set up a technical support operation a year ago to serve an installation based on dual Honeywell 68/10 processors.

The motivating factor here was the difficulty that had been experienced in predicting hard-

"It seemed unprofessional not to be sure that the system was performing as we'd hoped. In fact, the study proved more or less what we'd expected from the software monitor."

This does not mean that the effort was not worthwhile. "The study cost £10,000, but it was well worth it to make sure we'd avoided making any wrong decisions. It was also valuable as a brain-picking exercise; our aim is to make ourselves self-supporting.

"We're not planning to use a hardware monitor on a regular

27% profit increase for Sperry

SPERRY RAND, whose subsidiaries include Univac reported a massive 26.9% increase in profit over its previous financial year which ends on March 31. The figures were $224.1 million compared with $176.5 million.

Sales of $4,179 million were 14.5% up on the previous figure of $3,649.4 million. Fourth quarter figures were $992.5 million profit on $1,185.6 million sales. This was a 16.9% increase on the comparable quarter's figures of $59.4 million.

Perkin-Elmer upped its sales by 26% for the third quarter compared with the previous financial year. Profits were $13.1 million on $169.2 million as compared with $8.4 million on $151.6 million in the previous period. This also represents a 40% increase in profits.

An increase from $14,739.90 to $16,175,000 for the first quarter of 1979 over the same period last year has been reported by Modular Computer Systems. However, net profits were down at $996.05 compared to $1,139,000 in 1978.

Digital Equipment sales for the quarter up to the end of March were $405.9 million compared with $324.8 million for the same quarter in 1978. Profits before tax for the comparative quarters were $79 million and $59.2 million respectively.

Sales figures for the two quarters were divided into equipment sales of $355.5 million ($295.4 million in 1978) and service and miscellaneous sales of $110 million ($79.3 million in 1978).

Computer Sciences accounts for the year ended March 31 stated sales of $343.2 million with a profit before tax of $31 million. Comparable figures for 1977/78 were sales of $272.2 million and before tax profits of $21.3 million.

The profits for the fourth quarter were reduced due to a $1.9 million charge resulting from the withdrawal of its employees from Iran.

Four-Phase Systems reported sales of $40 million and profits before tax of $5.1 million for the quarter ending March 31. The comparable quarter in 1978 had sales of $29 million with before tax profits of $3.6 million.

Breaking the barriers of apartheid

WHENEVER South Africa is discussed most people take up positions behind the barricades. Here LAURA TATHAM gives a personal view of the progress the republic is making to break down the barriers of apartheid.

"WE recommend the adoption by all companies in the private sector of a Code of Employment Practice that will eliminate discrimination based on race or colour from all aspects of employment, including selection, promotion, pay, fringe benefits of all kinds, and training. This Code must not remain as pious words but must be a true instrument of change."

This is the gist of a statement that anticipated by nearly two years the South African Government's announced intention to end job apartheid.

Its joint sponsors were SSACOLA, the South African employers' federation and the Urban Foundation — a body dedicated to improve the quality of life for all non-whites which is supported by substantial subscriptions from more than 100 large and influential local companies. The Code has been generally well accepted and is being actively implemented, according to a recent Foundation news bulletin.

Enlightened self-interest has put the major computer companies in the vanguard of the movement. For they are faced by an acute shortage of technical skills that threatens their development in a wealthy, sophisticated and expanding market. Well aware that white resources are inadequate to meet their needs, they have stepped up their effort to mine the rich seam of unexploited non-white talent.

IBM, for instance, will spend more than $3 million on black education during the next three years, according to its 36-page "Special Report on South Africa" published late last year. One project involves co-operation with the American Chamber of Commerce in South Africa and other US businesses to fund a five-year commercial high school for 000 students. This will also provide adult

evening classes in Soweto and act as a community centre.

Sperry Rand, parent corporation of Sperry Univac, in February 1078 announced a programme of "affirmative action" in support of the Six Point Plan. The action covers multiracial in-house training in literacy and in supervisory, clerical and workshop skills and will include financing attendance at external courses.

As far back as 1973, Burroughs was employing a significant proportion of non-whites without discrimination in a variety of jobs. It has continued ever since to expand the scope of that programme.

"One misconception IBM helped to blow sky-high is that some blacks whose cultures never included the use of mathematics, while able to fix machines, would probably not understand programming," says the company's "Special Report". The failure of its early attempts to teach Cobol to blacks was found to stem solely from lack of sufficient opportunity for hands-on experience.

The ambitious, comprehensive technical training scheme that ICL has now operated for over a year has also proved beyond doubt that a white skin is no prerequisite for successful computing, either in-house or on customer sites.

"Without the five 'graduates' from our multiracial training school we would never have got our Protea project off the ground," I was told by John Theobold, internal systems manager for International Computers SA (Pty).

Protea is the specification and design phase of a complex online system which will keep tabs on hardware allocation and order progress and will eventually be used company-wide.

"It is parent board policy to employ, in management as well

as technical positions, nationals of all the countries in which we operate," I was reminded by John Starkey, ICL's managing director in South Africa. "The fact that, like everyone else, we're badly short of skilled people is a further incentive. Don't imagine, though, we're in this for charitable reasons. We're determined to increase our present 34% market share (IBM has 33%) and this implies using only people who are at least as competent as any we employ in Britain."

"Personality is an important as technical ability, specially for those who will be working

directly with customers," said John Brett, manpower development manager, architect of the multi-racial training programme and himself a South African, taking up the story. "Aptitude is only one of the wide range of assessment tests we use. Standards are never bent.

"For the first three courses we had a total of nearly 4,000 applicants," Brett continued. "Of these, we tested 842; 213 did well enough to go forward for personal interview; and 75 were accepted. Seventy-one of these completed the course, 10 dropped out or failed; 65 graduated. With a 91% pass rate — all

examinations are both set and marked by line managers — we believe our selection parameters are valid."

Only the number of whites was atypical, for it included four deaf mutes of whom three were not on the ICL payroll. Eight of the 36 are computer science graduates; six have relevant degrees in other disciplines; eight are undergraduates; the remainder are educated to matriculation or HNC standard.

Three are destined for Unilever, itself a pioneer in non-white training in artisan and management skills but which sends some trainees to ICL. Two

will go to Indian Affairs.

Twelve graduates from previous courses are now working in various African territories. The others have been absorbed into ICL jobs that range from customer support to software design and the tailoring of package programs for local users.

The big question must be whether integration really works in practice. During my stay in South Africa, I took fullest advantage of many opportunities to mix socially, and uninhibitedly to question two eavesdropping men and women of every race. Alert to detect any sign of social strain, I could discover only total "colour blindness".

BICC's Helen Little fights h out with Woolworth's Lindsy Kenworthy in the Ladies hockey dribbling competition.

The Ladies' 800 metres steeplechase proved a popular venue with male supporters at the water jump. The object, though, was to get over with dry feet.

Spark of success for powermen

BRITISH Nuclear Fuels and Manweb powered through to the final of Computastars when they left the opposition behind with margins of 12 and 17 points respectively in the North-west heat.

Held at the Kirkby Sports Stadium, Liverpool, on Sunday, the 22 Mens teams were put into four groups with the winners going through the heat finals.

As a result of ties, 12 teams made it with Manweb, the local electricity board, being the overall winner with 170.8 points and are pictured below. The events were discus, standing long jump, soccer penalties, short sprints and 200 metres sprint.

The Ladies will be represented by the British Nuclear Fuels team from Warrington (pictured below) who beat the Midland

COMPUTASTARS

Bank North-west Computer Centre's team into second place with 132 points.

Eleven Ladies teams entered and the winner was decided from the team with the best placings in seven events. These

were: shot putting, standing long jumps, throwing a cricket ball, netball shooting, dribbling a hockey ball, short sprints and the 600 metres steeplechase (pictured above).

Evens in the Mens finals were: shot putting, dribbling a soccer ball, dribbling a rugby ball, squat thrusts and the 800 metres steeplechase. There was a secondary competition for runners-up in Round I.

In the individual events, the Men fought a close battle with fractions of a point being used to decide placings in the final line-up. However, this did not stop Mike Guest of Littlewoods and Roy Watson of Woolworths tieing on 43.67.

In the Ladies individual events, the final placings were clear cut with Maureen Dooley beating Michella Probert into second place.

Barrie steps into breach

Boldry

THE old Army saying about not volunteering for anything did not apply as far as Unilever Computer Services Ltd's Barrie Boldry was concerned. Barrie, who had just flown in from Hamburg, was looking forward to a relaxing afternoon watching the competition. But on hearing that there was a shortage of marshalls, Barrie promptly volunteered to act as starter for the races.

LEFT — twas the luck of the Oirish for Maureen Dooley who pipped Michelle Probert for the Ladies Individual competition. Maureen, who works for the Midland Bank's North-west Computer Centre at Bootle, finished on 54 points while Michelle, who works for British Nuclear Fuels at Warrington, had 51.

RIGHT — the Manweb Mens team were clear winners in the team events on Sunday. They clocked up 170.8 points with second placed Management Control Systems on 153.2. The team — Paul Davies, Joe Norris, Emyr Jones and Mike Edwards — go through to the finals.

In the individual events Emyr, who works in Manchester, came fourth with 35.5 points.

LEFT — British Nuclear Fuel's Ladies team also takes the trip to Crystal Palace in September. The team — Mary Martin, Michelle Probert and Julie Wiscavasty — amassed 132 points with the Midland Bank trailing in second place on 120.5.

RIGHT — fractions counted throughout the Mens individual events at Kirkby as this photo shows. This tie that prevent Mike Guest (left) of Littlewoods...

Splash of colour on day's events

HIGHLIGHT of the day's competition must have been the steeplechase events which, at times, bore more relation to scenes from Monty Python than events run under the AAA rules.

In particular the Ladies 600 metres proved a popular diversion for the men who crowded round the water jump. The object, in theory, was that the competitor should get over without getting her feet wet. At least three of the ladies just went over regardless, causing ripples on the water.

In the Mens 800 metres steeplechase, one of the runners turned the tables on his detractors. The competitor, who was too shy to identify himself, fell in and promptly started to splash water over those laughing spectators who couldn't run away fast enough.

There are just two more heats to go before the finals on Saturday September 29. The East Anglian heat will be held on Sunday, June 10 at the University Athletic Ground, Milton Road, Cambridge and there are 19 teams competing.

The Copthall Stadium Barnet is the scene for the big North Thames heat on Saturday, June 30 with 47 teams fighting for honours.

Computastars is sponsored by Computer Weekly in conjunction with Wright Air Conditioning

TEAMS

Mens: Allied Bakeries I and II, Liverpool, BICC, Liverpool; British Nuclear Fuels, Warrington; Data Logic, Manchester; Fraser Williams & Co I and II, Manchester; Gemini Computer Services, Manchester; ICL (Local Govt), Liverpool; Initial Services, Manchester; Littlewoods, Liverpool; Liverpool Post, Liverpool; Management Control Systems; Manweb, Manchester; Midland Bank (NW) I, Bootle; Perkin-Elmer Data Systems I and II; and Woolworths, Rochdale.

Ladies: Allied Bakeries, Liverpool; BICC, Liverpool, British Nuclear Fuels, Warrington; Data Logic, Manchester; Fraser Williams & Co, Manchester; ICL (Local Govt), Liverpool; Littlewoods, Liverpool; Liverpool Post, Liverpool; Manweb, Manchester, Midland Bank (NW) I, Bootle; and Woolworths, Rochdale.

RESULTS

Ladies team events: 1 British Nuclear Fuels, 132 points; 2 Midland Bank, 120.5; 3 Woolworths and Liverpool Post 110.5 each; 5 Littlewoods, 8 Data Logic and 7 BICC and Allied Bakeries (joint placing).

Ladies individual events: 1 Maureen Dooley, Midland Bank, 54 points; 2 Michelle Probert, British Nuclear Fuels, 51; and, 3 Lyndsy Kenworthy, Woolworths, 40.5.

Mens team events: 1 Manweb, 170.8 points; 2 Management Control Systems, 153.2; 3 Midland Bank, 133; 4 Littlewoods II; 5 Data Logic; 6 Littlewoods I; 7 Woolworths I; 8 Initial Services; 9 Inland Revenue; 10 Gemini Computer Services and Woolworths II (joint placing) and 11 BICC.

Mens individual events: 1 Mike Guest, Littlewoods II and Roy Watson, Woolworths, 43.67 points each; 3 I. Wise, Management Control Systems, 39.2; and, 4 Emyr Jones, Manweb, 38.5.

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